

PCT REQUEST

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0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form PCT/RO/101 PCT Request	
0-4-1	Prepared Using	PCT-SAFE Version 3.50 (Build 0002.173)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	Korean Intellectual Property Office (RO/KR)
0-7	Applicant's or agent's file reference	05FLWW113
I	Title of invention	CONDENSING APPARATUS OF DISH WASHER
II	Applicant	
II-1	This person is	applicant only
II-2	Applicant for	all designated States except US
II-4	Name	LG ELECTRONICS, INC.
II-5	Address	20, Yoido-Dong, Youngdungpo-ku Seoul 105-875 Republic of Korea
II-6	State of nationality	KR
II-7	State of residence	KR
II-8	Telephone No.	82-2-526-4605
II-9	Facsimile No.	82-2-578-0655
II-10	e-mail	webmaster_e@lge.com
III-1	Applicant and/or inventor	
III-1-1	This person is	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	LEE, Gang Hyun
III-1-5	Address	101-113, LG Life Office, Gaeumjeong-dong Changwon-si, Gyeongsangnam-do 641-110 Republic of Korea
III-1-6	State of nationality	KR
III-1-7	State of residence	KR

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IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	HAW, Yong Noke
IV-1-2	Address	8th Fl. Songchon Bldg., 642-15, Yeoksam-dong, kangnam-ku Seoul135-080 Republic of Korea
IV-1-3	Telephone No.	9-1998-000616-9
IV-1-4	Facsimile No.	82-2-2185-5151
IV-1-5	e-mail	82-2-2185-5159
V	DESIGNATIONS	
V-1	The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.	
V-2	Item V-2 may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. As to the consequences of such national law provisions in these and certain other States, see Designations in PCT-SAFE Help.	KR
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	12 October 2004 (12.10.2004)
VI-1-2	Number	10-2004-0081271
VI-1-3	Country	KR
VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1
VII-1	International Searching Authority Chosen	Austrian Patent Office (ISA/AT)

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VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	4	
IX-2	Description	8	✓
IX-3	Claims	3	✓
IX-4	Abstract	1	✓
IX-5	Drawings	4	✓
IX-7	TOTAL	20	✓
	Accompanying items	paper document(s) attached	electronic file(s) attached
IX-8	Fee calculation sheet	-	✓
IX-9	Original separate power of attorney	-	✓
IX-11	Copy of general power of attorney	-	✓
IX-17	PCT-SAFE physical media	-	-
IX-19	Figure of the drawings which should accompany the abstract		
IX-20	Language of filing of the international application	Korean	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name (LAST, First)		
X-1-2	Name of signatory		
X-1-3	Capacity		

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FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/AT
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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PCT POWER OF ATTORNEY

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0-1	PCT Power of Attorney (for an international application filed under the Patent Cooperation Treaty) (PCT Rule 90.4)	
0-1-1	Prepared Using	PCT-SAFE Version 3.50 (Build 0002.173)
1	The undersigned applicant(s)	LEE, Gang Hyun
1-1-1	hereby appoints (appoint) the following person	HAW, Yong Noke 8th Fl. Songchon Bldg., 642-15, Yeoksam-dong, kangnam-ku Seoul135-080 Republic of Korea
1-2	as	agent
1-3	to represent the undersigned before	all the competent International Authorities
1-4	In connection with the international application identified below:	
1-4-1	Title of Invention	CONDENSING APPARATUS OF DISH WASHER
1-4-2	Applicant's or agent's file reference	05FLWW113
1-4-3	International application number (if already available)	
1-4-4	filed with the following Office as receiving Office	Korean Intellectual Property Office (RO/KR)
1-5	and to make or receive payments on behalf of the undersigned	

PCT POWER OF ATTORNEY

Print Out (Original in Electronic Form)

2-1	Signature of applicant, agent or common representative	
2-1-1	Name (LAST, First)	LEE, Gang Hyun
2-1-2	Name of signatory	
2-1-3	Capacity	
3	Date	06 October 2005 (06.10.2005)

PCT (ANNEX - FEE CALCULATION SHEET)

Print Out (Original in Electronic Form)

(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only		
0-1	International Application No.		
0-2	Date stamp of the receiving Office		
0-4	Form PCT/RO/101 (Annex) PCT Fee Calculation Sheet Prepared Using		PCT-SAFE Version 3.50 (Build 0002.173)
0-9	Applicant's or agent's file reference		05FLWW113
2	Applicant		LG ELECTRONICS, INC.
12	Calculation of prescribed fees		fee amount/multiplier Total amounts (KRW)
12-1	Transmittal fee	T	⇒ 45000
12-2-1	Search fee	S	⇒ 264000
12-2-2	International search to be carried out by	AT	
12-3	International filing fee (first 30 sheets)	I1	1126000
12-4	Remaining sheets	0	
12-5	Additional amount	(X) 0	
12-6	Total additional amount	I2	0
12-7	I1 + I2 =	I	1126000
12-12	Electronic Filing reduction (Full)	R	-256000
12-13	Total International filing fee (I-R)	I	⇒ 870000
12-14	Fee for priority document		
	Number of priority documents requested	1	
12-15	Fee per document	(X) 0	
12-16	Total priority document fee:	P	⇒
12-17	TOTAL FEES PAYABLE (T+S+I+P)		⇒ 1179000
12-19	Mode of payment		cash

13-2-1	Validation messages Request	Green? A translation of the int'l application into (one of) the following language(s) must be furnished within one month of the date of receipt by the receiving Office: German, English, French
	Validation messages Request	Green? Please note that the entire request (including the title of invention) must be in English
13-2-2	Validation messages States	Green? Please note that the following States have NOT been designated: KR.
13-2-7	Validation messages Contents	Green? Figure of the drawings which should accompany the abstract not specified. Please verify.
	Validation messages Contents	Green? Reference number for attached copy of general power of attorney not indicated.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 05FLWW113	FOR FURTHER ACTION	
International application No. PCT/KR 2005/003317	International filing date (<i>day/month/year</i>) 6 October 2005 (06.10.2005)	see Form PCT/ISA/220 as well as, where applicable, item 5 below. (Earliest) Priority Date (<i>day/month/year</i>) 12 October 2004 (12.10.2004)
Applicant <div style="text-align: center; margin-top: 10px;">LG ELECTRONICS INC.</div>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see continuation of this first sheet.

2. ☐ Certain claims were found unsearchable (see continuation of this first sheet)

3. ☐ Unity of invention is lacking (see continuation of this first sheet)

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in the continuation of this first sheet. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 3

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Continuation of first sheet

Continuation No. IV:

Text of the abstract

(Continuation of item 5 of the first sheet)

A condensing apparatus of a dish washer (100) is provided. The condensing apparatus includes an air duct (100) and a blower (210). Vapor from inside a tub (110) of the dish washer (100) flows through the air duct (200) in which it condenses. The blower (210) has a condenser fan (240) that blows air at the air duct (200) to exchange heat with the vapor flowing through the air duct (200), and a dryer fan that provides suctioning force for suctioning vapor from inside the tub (100).

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 2005/003317

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁷: A47L 15/48

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC⁷: A47LDocumentation searched other than minimum documentation to the extent that such documents are included in the fields searched
—Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Epodoc

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US5337500 A (ENOKIZONO) 16 August 1994 (16.08.1994) <i>abstract, figure 1.</i>	1-20
X	DE19946456 A1 (BSH BOSCH SIEMENS HAUSGERAETE GMBH) 5 April 2001 (05.04.2001) <i>abstract, figures 1-5.</i>	1-20
X	EP1447042 A1 (WHIRLPOOL CORP.) 18 August 2004 (18.08.2004) <i>abstract, figures 1-7.</i>	1-6, 10-12, 15-18, 20
Y	<i>abstract, figures 1-7.</i>	7, 19

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:
 "A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier application or patent but published on or after the international filing date
 "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
 "&" document member of the same patent family

Date of the actual completion of the international search
28 December 2005 (28.12.2005)Date of mailing of the international search report
13 January 2006 (13.01.2006)Name and mailing address of the ISA/ AT
Austrian Patent Office
Dresdner Straße 87, A-1200 ViennaAuthorized officer
BABUREK G.

Facsimile No. +43 / 1 / 534 24 / 535

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 2005/003317

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP0755652 A2 (SMEG SPA) 29 January 1997 (29.01.1997) <i>abstract, figure 1.</i>	1-6, 10-12, 15- 18, 20 7, 19
Y	<i>abstract, figure 1.</i>	
Y	EP1142527 A2 (AEG HAUSGERAETE GMBH) 10 October 2001 (10.10.2001) <i>abstract, figure.</i>	7, 19

INTERNATIONAL SEARCH REPORT

Information on patent family members

national application No.

PCT/KR 2005/003317

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
DE	A1	19946456	2001-04-05	none		
EP	A	755652		EP	A2	0755652
				IT	A1	MI951623
						1997-01-29
						1997-01-27
EP	A2	1142527	2001-10-10	DE	A1	10013399
						2001-09-27
EP	A1	1447042	2004-08-18	none		
US	A	5337500		GB	A	2263969
			1994-08-16	JP	A	5211978
						1993-08-11
						1993-08-24

PATENT COOPERATION TREATY

To:

HAW, YONG-NOKE
8th Fl., Songchon Bldg., 642-15 Yoksam-dong
Kangnam-gu, Seoul 135-080
Republik of Korea

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year)	13 January 2006 (13.01.2006)
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Applicant's or agent's file reference
05FLWW113

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/KR 2005/003317

International filing date (day/month/year)
6 October 2005 (06.10.2005)

Priority Date (day/month/year)
12 October 2004 (12.10.2004)

International Patent Classification (IPC) or both national classification and IPC
A47L 15/48

Applicant

LG ELECTRONICS INC.

1. This opinion contains indications relating to the following items:

- ☒ Cont. No. I Basis of the opinion
- ☐ Cont. No. II Priority
- ☐ Cont. No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Cont. No. IV Lack of unity of invention
- ☒ Cont. No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Cont. No. VI Certain documents cited
- ☐ Cont. No. VII Certain defects in the international application
- ☐ Cont. No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ AT
Austrian Patent Office
Dresdner Straße 87, A-1200 Vienna
Facsimile No. +43 / 1 / 534 24 / 535

Authorized officer
BABUREK G.
Telephone No. +43 / 1 / 534 24 / 352

Continuation No. I

IAP9 Rec'd PCT/PTO 19 MAY 2006

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed.

Continuation No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 6, 8, 9, 16**YES**Claims 1-5, 7, 10-15, 17-20**NO**

Inventive step (IS)

Claims ---**YES**Claims 1-20**NO**

Industrial applicability (IA)

Claims 1-20**YES**Claims ---**NO**

2. Citations and explanations:

The following documents have been cited in the Search Report:

D1: US5337500 A
D2: DE19946456 A1
D3: EP1447042 A1
D4: EP0755652 A2
D5: EP1142527 A2

Documents D1 – D4 disclose a condensing apparatus of a dishwasher for condensing vapour inside a dish washer tub comprising an air duct and a blower including a condenser fan and a dryer fan according to the characteristic features of claims 1, 10 and 17.

Therefore the subject matter of claims 1, 10 and 17 is not novel with respect to each one of the state of the art documents D1 – D4, and does not involve an inventive step according to each one of these documents.

Documents D1 – D4 further disclose a condensing apparatus where the condenser fan blows air along an outside of the air duct, a blower motor for driving the condenser fan and the dryer fan together and a rotating shaft according to the subject matter of claims 2 - 4, 11, 12, 15, 18 and 20.

Therefore the subject matter of claims 2 - 4, 11, 12, 15, 18 and 20 is not novel with respect to each one of the state of the art documents D1 - D4, and does not involve an inventive step according to each one of these documents.

Documents D1 and D2 also disclose a condensing apparatus where the condenser fan is disposed at a front of the blower according to claims 5 and 14. According to this, the subject matter of claims 5 and 14 is not novel in comparison to documents D1 and D2.

For a man skilled in the art it is obvious to use a cross flow-fan according to claims 6 and 16 in a condensing apparatus of one of the documents D1- D4. Therefore the subject matter of claims 6 and 16 is new but not inventive in comparison to the state of the art documents.

Documents D1 and D2 show also a blower disposed at a top of the air duct according claims 7 and 19. Therefore the subject matter of claims 7 and 19 is not new in comparison to documents D1 and D2.

As document D2 discloses a blower to which the dryer fan, the motor and the condenser fan are installed, according to claim 13, also the subject matter of this claim is not new with respect to document D1.

Documents D1 and D2 and D4 disclose also water discharge ports for discharging condensed moisture according to claims 8 and 9 but not a split-type vapour exhaust port according to the technical features of this claims. But according to the cited state of the art documents it is obvious for a man skilled in the art to build such a split-type vapour exhaust port comprising of the technical features of claims 8 and 9.

Therefore the subject matter of claims 8 and 9 is novel with respect to each one of the state of the art documents D1 and D2 and D4 but does not involve an inventive step.

Consequently it has to be considered that the subject matter of 6, 8, 9 and 16 is only novel with respect to each one of the prior art documents but none of the claims 1-20 involves an inventive step according to the prior art documents.

Industrial applicability is given.

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- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
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